



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,419	03/20/2001	Masaya Ogura	862.C2151	9530

5514 7590 07/22/2003

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

NGUYEN, HUNG

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 07/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,419

Applicant(s)

OGURA ET AL.

Examiner

Hung Henry V Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed July 17, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 17, 2003 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because it is not clearly understood how the pressure sensor (20) can perform its functions as claimed and described in the specification such as detecting the pressure inside the chamber (14) while it is positioned inside the projection optical system (13) and the projection optical system is substantially sealed. Please explain.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, as understood, the pressure (20) is used to detect the pressure of the projection optical system (13), the pressure (20) can not detect the pressure of the chamber (14) therefore, it is not clearly understood how the first correction means can correct the optical

Art Unit: 2851

characteristics of the projection optics unit in accordance with “the value of the pressure inside said at least one chamber” as claimed. Please explain.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. As best the claimed subject matters are understood (see rejection under 35 U.S.C. 112, second paragraph, supra). Claims are anticipated by reference.

6. Claims 1-8, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osakabe (U.S.Pat. 6,266,133) in view of Semba (U.S.Pat. 6,133,981) and further in view of Aoki (JP-405210049A).

7. With respect to claims 1-8, and 10-11, Osakabe et al teaches a projection optical system comprising substantially all of the limitations of the instant claims as set forth above such as: an illumination optical system (2) for irradiating a reticle (4) including a light source (1); a reticle stage for supporting the reticle; a projection optical system (6) for projecting a pattern formed on the reticle onto the substrate (5); and a substrate stage for supporting the substrate (see fig.1), at least one chamber (110) for internally accommodating the illumination optical system, the reticle stage, the substrate stage. Osakabe (fig.6) further teaches pressure sensors (33, 34) for

Art Unit: 2851

monitoring the pressure inside and the pressure outside of the chamber (6) which encloses the projection optical system and a controller (35) for controlling and maintaining the pressure inside and pressure outside of the chamber (6) at a predetermined level. The inside of the chamber is supplied with inert gas such as nitrogen, argon, or helium to correct optical characteristics of the projection optical system based on the pressure inside the chamber. Osakabe does not expressly disclose the pressure inside the chamber higher than the pressure outside the chamber. Semba discloses an processing system comprising a first unit that accommodates an exposure apparatus for transferring a pattern formed on a mask onto a substrate; a second unit which is a coating and developing unit and a connection unit (13) placed between the first and second unit. For the purpose of preventing the contamination caused by the particles, organic solvent from the outside atmospheric may flow into the exposure apparatus, Semba teaches the pressure in the exposure apparatus (S) is set higher than the pressure in the coating and developing unit (see fig.4). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the pressure inside the chamber higher than the ambient pressure to avoid contamination of the exposure apparatus and thus to improve the quality of the images to be printed. However, Osakabe as modified by Semba lacks to disclose the optical characteristics of the projection optical system being corrected based upon the pressure inside the chamber. Aoki teaches correcting the characteristics of the projection optical system (23) based upon the detected pressure by pressure sensor (19). It would have been obvious to a skilled artisan to combine the teachings of Osakabe as modified by Semba and Aoki to obtain the invention as specified in claim 8 for the purpose of correcting the characteristics of the projection optical system whereby improving the quality of the exposure apparatus.

Art Unit: 2851

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osakabe (U.S.Pat. 6,266,133) in view of Semba (U.S.Pat. 6,133,981), further in view of Aoki (JP-405210049A), and further in view of Arakawa (U.S.Pat. 6,356,338).

With regard to claim 9, Osakabe as modified by Semba and Aoki, lacks to show “substrate load lock chamber” and “reticle load lock chamber”. Arakawa teaches an exposure apparatus having “substrate load lock chamber” and “reticle load lock chamber” (see fig.1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the “substrate load lock chamber” and “reticle load lock chamber” as taught by Arakawa into the exposure system of Osakabe as modified by Semba and Aoki for at least the purpose of storing the substrates and reticles and keeping the substrates and reticles from being contaminated.

Response to Amendment

9. Applicant’s amendment filed May 19, have been entered. Claims 12-15 have been cancelled. Claims 1-3 and 5-11 have been amended. Applicant’s arguments with respect to the prior art have been carefully considered but have been traversed as set forth above.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Russ Adams can be reached on 703-308-2847. The fax phone numbers for the

Art Unit: 2851

organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

hvn
July 18, 2003



HENRY HUNG NGUYEN
PRIMARY EXAMINER